



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

08/472,876 06/07/95 GARCIA

A TRD-001-IA

HAROLD C. KNECHT, III
P.O. BOX 28338
ST PAUL MN 55128

LM02/0928

EXAMINER

MEI, X

ART UNIT

PAPER NUMBER

2747

DATE MAILED:

09/28/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/472,876

Applicant(s)
Garcia et al.

Examiner
Xu Mei

Group Art Unit
2747



☒ Responsive to communication(s) filed on Jul 12, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 2, 5, 9, 14, 15, 24, 28, 31, 33-35, 37, 38, and 43-53 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 14, 15, 31, 33-35, 37, 38, and 43-53 is/are rejected.

☒ Claim(s) 2, 5, 9, 24, and 28 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 28

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2747

1. This communication is responsive to the applicant's amendment dated 07/12/1999.

2. Claims 51, 52 and 53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 51, 52 and 53, the claimed limitation "and other such sounds" is vague and indefinite.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 31, 33-34, 43, 35, 37, 14, 44, 40, 45 and ~~51~~⁵²-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Op de Beek et al. (US Pat. 4,845,758, hereinafter, Beek), Audio Cyclopedia or Furui.

Regarding claims 31, 33-34, 43, 35, 37, 14, 44 and 40, each of Beek (Fig. 12), Audio Cyclopedia (Fletcher-Munson curve on page 22) or Furui (Figs. 3.1 and

Art Unit: 2747

3.2) discloses the output response of a circuit, which received an input audio signal from a source (the circuit is inherently included in order to process the input audio signal), such that when the input audio signal having a band of frequencies with a high end and a low end is transmitted therethrough, the input audio signal is distorted so as to increase in amplitude as per increasing frequencies from a reference frequency up to an amplitude peak at a high frequency, and after the high frequency, decrease in amplitude as per increasing frequencies toward the high end, and the reference frequency separates the band of frequencies into a band of high frequencies and a band of low frequencies, whereby an enhanced audio signal is produced that is inherently being recognizable as being the input audio signal enhanced such that audible sound reproduced from the enhanced audio signal exhibits a perceptively improved harmonic quality and sound source separation compared to the audible sound reproduced from the input audio signal.

Fig. 12 of Beek with reference frequencies of f_2 or f_4 , for example, can serve as the midpoint from which the response increases in either direction to a peak and then fall off as described in claims 31, 33-34, 43, 35, 37, 14, 44 and 40. And the input audio signal is being processed by an equalizer, i.e., a circuit.

The standard Fletcher-Munson equalization curve is used to ensure equal subject loudness at all frequencies for listeners. When implemented in any real system, i.e., circuit, would have produced the response with frequency below 50

Art Unit: 2747

Hz goes to zero as does the response somewhere above the frequency of 15 + kHz, as the results described in claims 31, 33-34, 43, 35, 37, 14, 44 and 40.

As to Furui text and Figs. 3.1 and 3.2, ordinary formant synthesis feeds noise into bandpass filters, i.e., a circuit, to synthesize consonants (unvoiced sounds). The formant peaks are implemented with filters (BPF's) and fed alternately with tonal or broadband noise. The results of the frequency response as shown in Fig. 3.1 is as described in claims 31, 33-34, 43, 35, 37, 14, 44 and 40.

Regarding claims 45 and 51-53, the input audio signal being processed by Beek, Audio Cyclopedia or Furui is at least one of the an audio signal of music, vocals or singing sound which originated from a magnetic tape player, used by Beek for signal equalization, or from a microphone for inputting speech or vocal signal by Furui, for example.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2747

6. Claims 15, 38 and 46-⁵⁰~~49~~ are rejected under 35 U.S.C. 103(a) as being unpatentable over Beek or Audio Cyclopedia or Furui. X

Regarding claims 15 and 38, recording/transmitting the enhanced audio signal taught by Beek or Audio Cyclopedia or Furui as recited above to a recording medium or other locations for later playback purpose would have been obvious to one of ordinary skilled in the art.

Regarding claims 46-⁵⁰~~48~~, the enhanced audio signal apparatus taught by Beek or Audio Cyclopedia or Furui disclosed the enhanced audio signal in various frequency ranges (Beek shown an enhanced signal (Fig. 11) has a range of 20-700 Hz; Audio Cyclopedia shown the Fletcher-Munson curve (Fig. 1-76C) from 20-10KHz; and Furui shown an enhanced audio signal (Fig. 3.1) has a range of 0-3KHz), and it is well know in the art to use various types of filter, i.e., low, band, or high pass filter, to extract desired audio frequency band for signal processing. It would have been obvious for one of ordinary skill in the art to use different band pass filter(s) to extract desired frequency bands with various amplitude peaks for the enhanced audio signal of Beek, Audio Cyclopedia or Furui.

7. Claims 24, 2. 5, 8 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2747

8. Applicant's amendment necessitated the new grounds of rejection.

Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

9. Any response to this final action should be mailed to:

Box AF

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications; please mark "EXPEDITED
PROCEDURE")

Or:

(703) 305-9508 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xu Mei whose telephone number is (703) 308-6610.

Serial Number: 08/472,876


Page 7

Art Unit: 2747

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Xm

09/24/1999


FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2700